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| APPLICATION NO.                   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------|-------------|----------------------|---------------------|------------------|
| 08/952,990                        | 04/09/1998  | MATS LEIJON          | 70556-2/8238        | 3261             |
| 25269                             | 7590        | 11/21/2003           | EXAMINER            |                  |
| DYKEMA GOSSETT PLLC               |             |                      |                     |                  |
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| WASHINGTON, DC 20005              |             |                      |                     |                  |
|                                   |             |                      | ART UNIT            | PAPER NUMBER     |
|                                   |             |                      | 2834                |                  |

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 08/952,990             | LEIJON ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Burton S. Mullins      | 2834                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 August 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-8,11,13,15-19,21-43,45,46 and 48-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-8,11,13,15-19,21-43,45,46 and 48-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 1997 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other:  |

## **DETAILED ACTION**

### ***Suspension***

1. Pursuant to the Board of Appeal's final decision regarding U.S. Application No. 08/973,019, suspension has been lifted. As set forth in the decision on petition requesting suspension, the instant application was granted a suspension pending the decision on appeal of the '019 application. On November 27, 2002, the Board affirmed the rejection of the '019 application and on August 27, 2003, the Board denied applicant's request for reconsideration, thus terminating prosecution of the '019 application. An action on the merits follows.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "insulated" and "non-insulated" strands (claim 39) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-2, 5-8, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Shildneck (US 3,014,139) and Evans (US 3,602,636). Applicant's admitted prior art, in particular Fig.2, teaches a HVDC transmitter plant directly connected for generating high voltage power comprising a rotating high-voltage machine with a winding and a converter for converting mechanical torque into direct current and direct voltage, or vice versa.

Applicant's prior art does not specifically describe a flexible electrical cable comprising a plurality of insulated strands and at least one uninsulated strand.

Shildneck teaches a flexible insulated conductor used in large, turbine-driven generators (c.1, lines 9-16) which employs a flexible insulating material (e.g., silicone rubber, c.3, lines 73-75), a flexible conductor (c.4, lines 40-44) and a strand twisting technique (c.4, lines 47-50) to impart sufficient flexibility to the conductor so as to overcome the deficiencies of semi-rigid or rigid conductor bars described at c.2, lines 28-38, such as increased cost and manufacturing time.

Evans teaches service entrance cables including insulated and non-insulated conductors, the latter used to provide a neutral or ground for the cable (c.2, lines 46-50 & 56-63).

It would have been obvious to one having ordinary skill to modify the prior art generator and provide flexible cable conductors per Shildneck to reduce cost and

manufacturing time, and further to provide insulated and uninsulated strands per Evans to provide a neutral or ground for the cable.

5. Claims 15-19, 21-29, 32-43, 45-46 and 48-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art, Shildneck and Evans, further in view of Elton et al. (US 4,622,116). The combination of applicant's admitted prior art, Shildneck and Evans does not teach conductors with semi-conducting properties.

Elton teaches that it is known to have an electrical cable comprising an internal grading layer of semi-conducting pyrolyzed glass fiber layer in electrical contact with the cable conductor. In another embodiment, Elton teaches an electrical cable with an exterior layer of internal grading layer of semi-conducting pyrolyzed glass fiber in contact with an exterior cable insulator with a predetermined reference potential. Elton's cable winding minimizes the possibilities of corona discharge, maintains resistivity value after impregnation, minimizes voids and maintains uniform and equal electric potential (c.2, lines 44-60).

It would have been obvious to modify applicant's admitted prior art, Shildneck and Evans and provide conductors with semi-conducting properties per Elton since semi-conductors would have been desirable to minimize possibility of corona discharge.

With regard to forming the semi-conducting layers with the same coefficient of thermal expansion as that of the insulation layer, one of ordinary skill would have realized this feature since it would have prevented cracking of the insulation and wear between the insulation and semi-conducting layer.

Regarding claim 29, Shildneck teaches stator slots comprising cylindrical openings for receiving the windings circular cross-sections separated by narrow waist parts indicated at 5 (Fig.1).

6. Claims 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art, Shildneck, Evans and Elton et al., further in view of German Patent No. 468,827. The combination of applicant's admitted prior art, Shildneck, Evans and Elton et al. does not teach stator slots with substantially cylindrical openings of decreasing radius.

German Patent 468,827 teaches a stator with cylindrical opening winding slots having decreasing radius in order to accommodate winding conductors of varying diameter (c.1, lines 25-29).

It would have been obvious to one having ordinary skill in the art to modify applicant's admitted prior art, Shildneck, Evans and Elton et al. and provide cylindrical stator slot openings of decreasing radius in order to accommodate winding conductors of varying diameter.

#### ***Response to Arguments***

7. Applicant's arguments filed 12-03-01 have been fully considered but they are not persuasive. Regarding Shildneck teaching only a low voltage machine, the terms "low voltage" and "high voltage" used throughout applicant's argument do not help to convince the examiner of Shildneck's inapplicability. Applicant's specification defines "high voltage" as voltages exceeding 10kV (p.20, lines 17-18). Though Shildneck gives no specific output

voltage, the order of magnitude of tens of kV is common amongst "large, turbine-driven generators" disclosed by Shildneck.

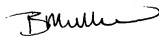
Applicant argues that Evans "has nothing to do with high voltage electric machines," i.e., Evans is nonanalogous art. It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Evans is within the field of applicant's endeavor since it pertains to an electrical conductor.

Applicant argues that Elton does not teach a cable used as a winding in an electric machine. This is not convincing because Elton teaches that the embodiments shown in Figs. 1-7 are suitable for use in a dynamoelectric machine (abstract, lines 4-8). The cable of Fig. 7 is disclosed as being a further embodiment of Figs. 1-6, which are shown to be suitable for windings on a stator in a dynamo-electric machine (c. 8, lines 26-38). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Elton's cable layers provide protection from corona discharge.

*Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone number for the organization where this application or proceeding is assigned is 305-1341.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

11 November 2003  
bsm